

Amendments to the Claims:

10. (Currently Amended) An improved solvent-free oligomerization process for the oligomerization of an alpha olefin, said process comprises:

charging to an oligomerization reaction zone an oligomerization feed mixture comprising said alpha olefin;

contacting within said oligomerization reaction zone said oligomerization feed mixture with a catalyst complex consisting essentially of boron trifluoride and an alcohol promoter to thereby yield a polyalphaolefin product; and

providing a concentration in said oligomerization feed mixture of a modifier consisting essentially of carboxylic acid wherein said concentration is sufficient to significantly increase the yield of trimer and tetramer in said polyalphaolefin product as compared to the yield when there is no said concentration of said modifier.

11. (Previously added) An improved oligomerization process as recited in claim 10 wherein the carboxylic acid of said modifier is selected from molecules containing from 2 to 10 carbon atoms.

12. (Previously added) An improved oligomerization process as recited in claim 10 wherein said concentration of said modifier is in the range of from about 0.08 mole percent to about 2.0 mole percent based on the said alpha olefin of said oligomerization feed mixture.

13. (Previously added) An improved oligomerization process as recited in claim 12 wherein said concentration of said modifier is in the range of from 0.16 mole percent to 0.35 mole percent based on the alpha olefin of said oligomerization feed mixture.

14. (Previously added) An improved oligomerization process as recited in claim 10 wherein said oligomerization reaction zone during the contacting step is maintained at a temperature in excess of 30°C.

15. (Previously added) An improved oligomerization process as recited in claim 14 wherein said oligomerization reaction zone during the contacting step is maintained at a temperature in the range of from 40°C to 150°C.

16. (Previously added) An improved oligomerization process as recited in claim 15 wherein said alpha olefin of said oligomerization feed mixture is selected from monounsaturated alpha olefins having from 3 to 22 carbon atoms.

17. (Previously added) An improved oligomerization process as recited in claim 16 wherein said alpha olefin of said oligomerization feed mixture contains from 3 to 14 carbon atoms.

18. (Previously added) An improved oligomerization process as recited in claim 17 wherein said alpha olefin is selected from the group consisting of propene, 1-butene, 1-pentene, 1-hexene, 1-heptene, 1-octene, 1-decene, 1-dodecene, and 1-tetradecene.